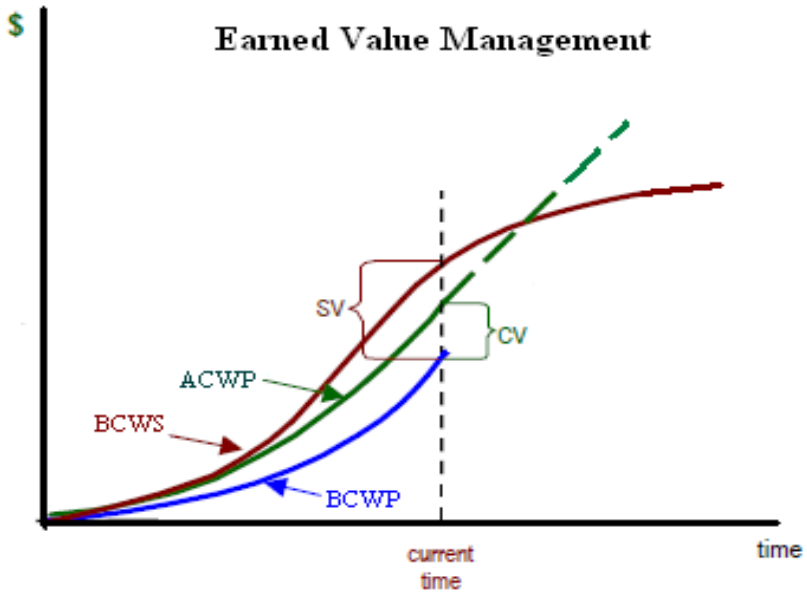
DOE Office of Environmental Management
Project Management
Earned Value Management

The U.S. Department of Energy (DOE) uses Earned Value Management (EVM) as a project management tool that measures actual performance of work scope and the associated cost and schedule compared to the approved baseline plan for the project.

EVM has proven to be a valuable tool for project managers and is now being used in a wide variety of government contracts and in much of the private sector as well. For most construction and cleanup projects, DOE requires the use of the widely recognized national standard for EVM from the American National Standards Institute/Electronic Industry Association called ANSI/EIA 748: Earned Value Management Systems.

Basic concepts of EVM:

The figure below illustrates the analysis of schedule and cost performance using the EVM technique.



- In the project planning stage, all project activities are assigned a "dollar value" termed the Budgeted Cost for Work Scheduled (BCWS). In other words, the BCWS represents the planned work in terms of the planned cost of that work. Physical progress is measured in dollars, so schedule performance and cost performance can be analyzed in the same terms.
- During project execution, project activities "earn" the apportioned dollar value based on the amount of work completed, termed as the Budgeted Cost for Work Performed (BCWP). In other words, the BCWP represents the work that is completed in terms of the originally planned cost for that work.
- The actual amount of money spent on the completed work is tracked as the Actual Cost of Work Performed (ACWP).
- The Budgeted Cost for Work Performed (BCWP) can then be compared to the Actual Cost of Work Performed (ACWP) to determine any cost variance (under- or over-spending).
- The Budgeted Cost for Work Performed (BCWP) can also be compared to the Budgeted Cost for Work Scheduled (BCWS) to determine any schedule variance (ahead or behind schedule).

- The BWCP and ACWP can also be used to predict future performance trends and forecast any anticipated change to the Completion Date or the Estimate At Completion (EAC).

The benefit of EVM is the ability to take physical progress into account when analyzing cost performance. If a project's actual costs to date are simply compared to planned costs, without a measure of physical progress, the results can be misleading since the relationship of progress and spending are not known. When properly applied, EVM provides an early warning of project performance problems. By reliably identifying trends and problems early, EVM helps managers effectively plan, control, and manage projects so they can take corrective action and re-plan the work, if necessary. Systematic implementation of EVM throughout the organization allows comparative review of project performance, helping managers make better-informed decisions.

DOE's EVM approach:

DOE has improved its approach to project management by integrating Earned Value Management concepts in managing major projects, contracts and reporting project status.

EM uses EVM as part of an integrated management system to evaluate project performance. EVM objectively measures performance against the approved project baseline plan that describes the requirements to be met by the project in terms of scope, deliverables or milestones, schedule, and cost. Progress on project performance utilizing EVM data is assessed monthly by every level within contractor and DOE management from the contractor control account manager closest to the work up to the DOE Senior Management. Effective application of EVM with project baseline management is intended to improve EM's success rate in completing projects on time and within budget.

The Office of Environmental Management (EM) requires all contractors with contracts greater than or equal to $20 million to implement EVM systems and be certified in their use. The DOE Office of Engineering and Construction (OECM) is the certifying organization. To qualify for certification, a contractor must undergo a review by an independent team of OECM and EM personnel of its EVM policies, procedures and implementation to ensure they meet 32 basic guidelines in the ANSI/EIA-748 standard. Below is a list showing the certification status for major EM contracts.

CONTRACTOR EARNED VALUE MANAGEMENT SYSTEM CERTIFICATION STATUS
(Revised April 6, 2010)

DOE Office (Geographic Site)	**Contract Name** Contractor Name	**Principal Companies**	**Certified Green = Yes Red = No**
Savannah River (Aiken, SC)	**Salt Waste Processing Facility** Parsons Infrastructure & Technology Group	Parsons Infrastructure & Technology Group, Inc.	
	Management & Operations Contract Savannah River Nuclear Solutions, LLC	Fluor Corporation Honeywell International, Inc. Northrop Grumman Corporation	
	Liquid Waste ** Savannah River Remediation, LLC	URS - Washington Division B&W Technical Services Group, Inc CH2M-Hill Constructors, Inc. AREVA Federal Services, LLC Bechtel National, Inc.	
Oak Ridge (Oak Ridge, TN)	**Oak Ridge Cleanup Contract** Bechtel Jacobs Company	Bechtel National, Inc. Jacobs Engineering Group	
	Building 3019 Construction for Uranium233 Downblending Isotek Systems, LLC	Energy*Solutions* Federal Services, Inc. Nuclear Fuel Services Burns & Roe Enterprises, Inc.	
	Transuranic Waste Processing Facility ** Wastren Advantage, Inc.	Wastren Advantage, Inc.	
Idaho (Idaho Falls, ID)	**Idaho Cleanup Project** CH2M-WG Idaho, LLC	CH2M Hill Companies, Ltd. URS - Washington Division	
Richland (Richland, WA)	**Hanford River Corridor Contract** Washington Closure Hanford, LLC	URS - Washington Division CH2M-Hill Companies, Ltd. Bechtel Corporation	

CONTRACTOR EARNED VALUE MANAGEMENT SYSTEM CERTIFICATION STATUS
(Revised April 6, 2010)

DOE Office (Geographic Site)	**Contract Name** Contractor Name	**Principal Companies**	**Certified Green = Yes Red = No**
Richland **(Richland, WA)**	**Plateau Remediation Contract** CH2M Hill Plateau Remediation Co., LLC	CH2M Hill Constructors, Inc. East Tennessee Materials & Energy Corporation, Inc. Fluor Federal Services, Inc. AREVA Federal Services, LLC	
	Mission Support Contract ** Mission Support Alliance, LLC	Lockheed Martin Integrated Technology, LLC Wackenhut Services, Inc. Jacobs Technology, Inc.	
River Protection **(Richland, WA)**	**Waste Treatment Plant Operations** Bechtel National, Inc.	Bechtel National, Inc. URS - Washington Division	
	Tank Operations Contract Washington River Protection *Solutions,* LLC	URS - Washington Division Energy*Solutions* Federal Services, Inc.	
Portsmouth **(Portsmouth, OH)** **&** **Paducah** **(Paducah, KY)**	**Paducah Remediation** Paducah Remediation Services, LLC	Portage Environmental, Inc. Shaw Environmental, Inc.	
	Remediation LATA/Parallax Portsmouth, LLC	Los Alamos Technical Associates, Inc. Parallex, Inc.	
	DUF_6 Conversion Project Uranium Disposition Services, LLC	Energy*Solutions* Federal Services, Inc. Burns and Roe Enterprises, Inc. AREVA Federal Services	
Carlsbad **(Carlsbad, NM)**	**Management & Operations Contract** Washington TRU Solutions, LLC	URS - Washington Division Weston Solutions	
Los Alamos National Laboratory **(Los Alamos, NM)**	**Management and Operations Contract** Los Alamos National Security, LLC	University of California BWX Technologies, Inc. Bechtel National, Inc. Washington Group International	

CONTRACTOR EARNED VALUE MANAGEMENT SYSTEM CERTIFICATION STATUS
(Revised April 6, 2010)

DOE Office (Geographic Site)	**Contract Name** Contractor Name	**Principal Companies**	**Certified Green = Yes Red = No**
Nevada Test Site (Nye County, NM)	**Nevada Test Site Management & Operations Contract** National Security Technologies, LLC	Northrop Grumman Corporation AECOM CH2M Hill Nuclear Fuel Services, Inc.	
	Nevada Site Office Environmental Engineering Services ** Navarro Nevada Environmental Services, LLC	Navarro Research and Engineering, Inc. INTERA, Inc.	
Pantex (Amarillo, TX)	**Pantex Management & Operations Contract** Babcock & Wilcox Technical Services Pantex, LLC	BWX Technologies, Inc. Honeywell International, Inc. Bechtel National, Inc.	
Sandia (Albuquerque, NM)	**Sandia Management & Operations Contract** Sandia Corporation	Lockheed Martin	
Brookhaven (Upton, NY)	**Brookhaven National Laboratory Management and Operations Contract** Brookhaven Science Associates, LLC	Battelle Research Foundation of State University of New York	
Moab (Moab, UT)	**Moab Mill Tailings Cleanup Project** Energy*Solutions* Federal Services, Inc.	Energy*Solutions* Federal Services, Inc.	
West Valley Development Project (West Valley, NY)	**West Valley Development Project Cleanup** West Valley Environmental Services Company LLC	URS Corporation Jacobs Engineering Group Environmental Chemical Corporation Parallax	
Separations Process Reactor Unit (Niskayuna, NY)	**Deactivation, Demolition & Removal of G2 & H2 Nuclear Facilities** URS - Washington Division	URS - Washington Division	

CONTRACTOR EARNED VALUE MANAGEMENT SYSTEM CERTIFICATION STATUS (Revised April 6, 2010)			
DOE Office (Geographic Site)	**Contract Name** Contractor Name	**Principal Companies**	**Certified Green = Yes Red = No**
Energy Technology Engineering Center (Ventura County, CA)	**Energy Technology Engineering Center Closure Project** The Boeing Company	The Boeing Company	
Stanford Linear Accelerator Center (Menlo Park, CA)	**Management & Operations Contract** The Leland Stanford Junior University	The Leland Stanford Junior University	

** Contract recently awarded and contractors are in transition.